

WHAT IS CLAIMED IS:

1. A system for managing a community Ethernet switch comprising:
  - at least one network interface circuit each coupled to an end user and an exchange through a first line so as to control a data packet transmission
  - 5 between each end user and said exchange for managing a transmission and a receiving of said data packet;
  - a second line coupled between said exchange and said Ethernet switch so that said exchange is capable of monitoring and managing said Ethernet switch and packet messages under monitor and management are sent to said Ethernet
  - 10 switch from said exchange; and
  - a simple network management protocol (SNMP) installed on said Ethernet switch for setting a management value of a management information base (MIB) so that said Ethernet switch is capable of monitoring said at least one network interface circuit based on said management value.
- 15 2. The system of claim 1, wherein said Ethernet switch is capable of writing a test result into said MIB, commanding said SNMP to collect said result for transmitting to said exchange for analysis and determination by network management personnel.
3. The system of claim 1, further comprising a detection loop on each network
- 20 interface circuit so that based on said management value of said MIB said Ethernet switch is capable of transmitting enable or disable signals to each detection loop for activation, performing a loop detection on each network interface circuit, writing a test result into said MIB, and commanding said SNMP to collect said result for transmitting to said exchange.
- 25 4. The system of claim 1, wherein each network interface circuit is a very high speed digital subscriber line (VDSL) interface circuit.
5. The system of claim 1, wherein said second line is a fiber-optic line and a

transmission thereof is performed on a cable modem for transmitting said management packet messages.

6. A community Ethernet switch comprising:

an Ethernet switching circuit for either receiving data packets from an exchange or sending said data packets to said exchange through a first line;

a network management control circuit for receiving network management packets from said exchange through a second line and based on said received network management packets for setting a management value of a management information base (MIB) of a simple network management protocol (SNMP) by said SNMP; and

a plurality of network interface circuits each coupled to an Ethernet NIC at an end user and said exchange;

wherein each network interface circuit transmits a management value of said MIB to said Ethernet switching circuit through a bus so that based on said management value, said Ethernet switching circuit is capable of monitoring said network interface circuits, writing a test result into said MIB, and commanding said SNMP to collect said result for transmitting to said exchange for analysis and determination by network management personnel.

7. The switch of claim 6, wherein each network interface circuit comprises a detection loop coupled to said Ethernet switching circuit so that based on said management value of said MIB said Ethernet switching circuit is capable of transmitting enable or disable signals to each detection loop for activation, performing a loop detection on each network interface circuit, writing a test result into said MIB, and commanding said SNMP to collect said result for transmitting to said exchange.

8. The switch of claim 6, wherein each network interface circuit is a very high speed digital subscriber line (VDSL) interface circuit.